



INVENTORS

ASSOC. PROF. DR. SUPRI A. GHANI
DATO' PROF. DR. KAMARUDIN HUSSIN
ASSOC. PROF. DR. MAHMAD NOR JAAFAR
MOHD HANIF BIN MOHD PISAL
MOHD HISHAMUDDIN BIN CHE MAT
AHMAD AZUDIN NORDIN
EMY AZAT BIN AZIMI

CONTACT DETAILS

Institute of Sustainable Agrotechnology,
Sg. Chuchuh Campaa,
02100 Padang Besar, Perlis
e-mail: supri@unimap.edu.my

UniMAP BIOFIBER FERTILIZER

Patent No.: PT/4585/UNIMAP/13



PRODUCT DESCRIPTION

Organic matter is known to improve soil health and availability of plant nutrients. Although some of the organic wastes are utilized to some extent in agriculture but most of them are either burnt or remained unutilized, specially in developing countries. Both of the latter practices not only pose serious threat to the environment, but also result in the loss of useful nutrient pool which otherwise can be made available to plant. Organic waste materials are available in huge amounts in the form of farm waste, city waste (sewage sludge), poultry litter and industrial waste (food, sugar, cotton and rice industry).

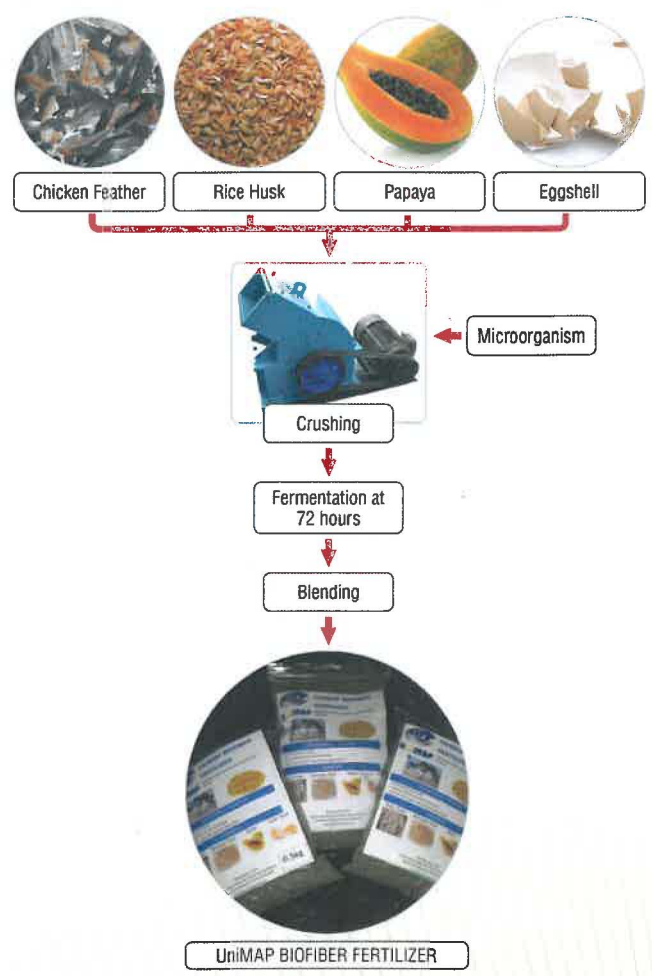
NOVELTIES

- Aid in replenishing and maintaining long-term soil fertility by providing optimal conditions for soil biological activity.
- Suppress pathogenic soil organisms.
- Degrade toxic organic chemicals.
- Promote improved drainage.
- Improve soil aeration.
- Increase the protein and mineral content of most crops.
- Produce plants with increased sugar flavor and nutrient content.
- Reduce input costs.

COMMERCIAL POTENTIALS

- Increase in the use of fertilizers lead to increase the crop productivity were good quality of soil make it more productive.
- Increased usage of chemical fertilizer leads to damage in soil texture and raises other environmental problems and reduce soil erosion.

METHODOLOGY



RESULTS

Table 1: Composition of UniMAP Biofiber Fertilizer using Chemical / Physical Test.

Elements	Value %
Nitrogen	24.0
Phosphorus	20.0
Kalium	15.6
Calcium	9.8
Trace Elements (Metal Oxide)	10.6
Ash	20.0

Table 2: Ingredients of Chicken Feather Fibers Using Chemical/ Physical Test from DXN Holding Berhad, Kedah, Malaysia.

Parameter	Value (%)
Carbohydrate	3.20
Fat	0.80
Protein	86.8
Moisture	6.20

Table 3: Ingredients of Eggshell Using Chemical/Physical Test from DXN Holding Berhad, Kedah, Malaysia.

Parameter	Value (%)
Calcium Oxide	98.10
Fat	0.10
LOI	0.05
Trace Elements	1.75

PUBLICATIONS

- 1. S. P. Ghosh, M. Ghosh, S. Ghosh, Effect of polyethylene grafted maleic anhydride on properties of low density polyethylene/eggshells powder composites. *Polymer-Plastics Technology and Eng.* 49 (2010), 1-7
- 2. S. P. Ghosh, M. Ghosh, S. Ghosh, S. Chandra, and Abu Hasan, Enhancing Conductive Polymer Performance Using Eggshell for Ammonia Sensor. *J. of Physical Science*, 23(2), 1-8, 2012.
- 3. S. P. Ghosh, M. Ghosh, S. Ghosh, H. S. Lee, and Tan Soo Jin, Effect of Sodium Hydroxide Treatment on the Properties Low Density Polyethylene Composites Filled with Chicken Feather Fiber. *Journal of Applied Polymer Science* 110 (2012), 2144-2154.
- 4. S. P. Ghosh, M. Ghosh, S. Ghosh, S. Chandra, Polyethylene / Natural Polymer - Chicken Feather Fibers (RHDFE/AN/PDF) Composites : The Effect of Fiber Loading and Benzyl Urea. *Polymer-Plastics Technology and Eng.* 52 (12) 1310-1322, 2012.

